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For : TRANSFER PLANT AND METHOD FOR LOADING
AND UNLOADING CONTAINERS FROM
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The listing of the claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Please amend claims 1-17.

Please add new claims 18-30 as follows:

1. (Currently Amended) ~~Transfer~~ A transfer plant, especially for loading and unloading ISO containers from container ships at seaports, comprising:
with a vertical support which is propped up at the land side and on which a horizontal extension arm is braced, which by said vertical support, wherein said horizontal extension arm protrudes across the ship that is to be unloaded on the sea side; and
along which a horizontal conveying device can adapted to travel, which along said extension arm, wherein said conveying device cooperates with land-side and sea-side hoisting and lowering devices that pick up and put down the containers, being that are arranged at the land and sea side and also on the horizontal extension arm, characterized in that
wherein said conveying device comprises at least two horizontal conveying devices (9, 10) are arranged on the said horizontal extension arm (1.4, 1.5, 1.6), which can wherein said at least two horizontal conveying devices are adapted to travel independently of each other and alongside each other between the land-side and sea-side hoisting and lowering devices (11, 13) along the said horizontal extension arm (1.4, 1.5, 1.6).
2. (Currently Amended) ~~Transfer~~ The transfer plant per claim 1, characterized in that
including intermediate storage devices (12, 14) that are arranged on the horizontal extension arm (1.4, 1.5, 1.6) in the region of at least one chosen from the land-side and/or the sea-side hoisting and lowering devices (11, 13), where wherein containers can be put down or picked up by the land-side or sea-side hoisting and lowering devices (11, 13), as well as the horizontal conveying devices (9, 10).

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3. (Currently Amended) ~~Transfer~~The transfer plant per ~~claims 1 or~~claim 2, echaracterized in that ~~wherein the~~said horizontal extension arm is ~~divided into~~comprises a rigid base arm (1.4) at the sea side, a swivel arm (1.5) joined to it at the sea side, and a rigid extension arm (1.6) protruding at the land side; ~~the~~said rigid sea-side base arm (1.4) and ~~the~~said rigid land-side arm (1.6) ~~are being~~ fastened to ~~the~~said vertical support (1.3), and ~~wherein the~~said rigid sea-side base arm (1.4) accommodates ~~the~~said sea-side hoisting and lowering device (11) in the position of rest of the transfer plant, in which ~~the~~said sea-side swivel arm (1.5) is swiveled upward.

4. (Currently Amended) ~~Transfer~~The transfer plant per ~~one of claims 1 to~~claim 3, echaracterized in that ~~the~~ including a railway carried by the sea-side portion (1.4, 1.5) of ~~the~~said horizontal extension arm ~~carries a~~, ~~wherein said~~ railway (5) ~~is for movement of a~~ trolley (6) of the sea-side hoisting and lowering device (11), ~~wherein the~~said land-side hoisting and lowering device (13) is fastened at the land-side portion (1.6) of ~~the~~said horizontal extension arm, and ~~said transfer plant further including other~~ railways (7, 8) for the horizontal conveying devices (9, 10) ~~are arranged on both sides next to the~~said railway (5) of the sea-side hoisting and lowering device (11) and next to the land-side hoisting and lowering device (13) ~~and thus essentially along the entire horizontal extension arm (1.4, 1.5, 1.6).~~

5. (Currently Amended) ~~Transfer~~The transfer plant per claim 4, echaracterized in that ~~the~~wherein said vertical support (1.3) is fashioned in the shape of a tower, ~~the~~wherein said railway (5) for the hoisting and lowering device (11) ends in the region of ~~the~~said vertical support (1.3), and ~~the~~said other railways (7, 8) for ~~the~~said horizontal conveying devices (9, 10) run laterally past the vertical support.

6. (Currently Amended) ~~Transfer~~The transfer plant per ~~one of claims 2 to~~claim 5, echaracterized in that ~~the~~wherein said intermediate storage devices (12, 14) each comprise a downwardly extending support column (12.1, 14.1), ~~at whose lower end is attached and a~~

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horizontal swivel arm (12.2, 14.2), at whose end away from the support column (12.1, 14.1) is hinged attached at a lower end of said support column and a carrying frame (12.3, 14.3), which hinged at an end of said swivel arm away from said support column, wherein said carrying frame can swivel both into the region underneath the said sea-side or land-side hoisting and lowering device (11, 13) and into the region of the said two horizontal conveying devices (9, 10) into corresponding pick-up and hand-off positions for the picking up or handing off of a container (19).

7. (Currently Amended) ~~Transfer~~ The transfer plant per claim 6, characterized in that ~~the~~ wherein said sea-side swivel arm (12.2) and ~~the~~ said sea-side carrying frame (12.3) can each swivel at least $\pm 90^\circ$ about their vertical axis, independently of each other.

8. (Currently Amended) ~~Transfer~~ The transfer plant per claim 6 or 7, characterized in that ~~the~~ including a parallelogram type coupler mechanism, wherein said swivel mechanism of ~~the~~ at least one chosen from said land-side carrying arm (14.2) and/or ~~the~~ and said land-side carrying frame (14.3) can be driven by said parallelogram type coupler mechanism (34), so that the orientation of the container (21) remains unchanged during the swivel motion.

9. (Currently Amended) ~~Transfer~~ The transfer plant per ~~one of claims 6 to~~ claim 8, characterized in that ~~the~~ wherein said carrying frame (12.3, 14.3) for the container (19, 21) can be swiveled into a central swivel position between the two pick-up and hand-off positions in the region of ~~the~~ said railways (7, 8), where the container can be connected to or detached from ~~the~~ said sea-side or land-side hoisting and lowering device (11).

10. (Currently Amended) ~~Transfer~~ The transfer plant per ~~one of claims 1 to~~ claim 9, characterized in that ~~the~~ wherein said horizontal conveying devices (9, 10) each consist of comprise a frame (29) with a rail traversing mechanism (30) that can travel on ~~the~~ said railways (7, 8), a hoisting mechanism (31) and a spreader (32) to receive the container (19) which has been swiveled and positioned underneath the spreader (32).

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11. (Currently Amended) ~~Transfer~~The transfer plant per ~~one of claims 1 to~~claim 10, characterized in that ~~the~~wherein said land-side hoisting and lowering device (13) is configured as a lift guided on ~~the~~said vertical support (1.3), ~~which consists of~~wherein said lift comprises a trolley (23), guided on a horizontal hoisting beam (13.1), with a load suspension means (22) for the container (21), wherein ~~the~~said hoisting beam (13.1) is suspended from hoisting cables (24) and linked by a cross rail ~~(balancing arm 13.2)~~ to guide rollers (13.3) that can roll against ~~the~~said vertical support (1.3).

12. (Currently Amended) ~~Transfer~~The transfer plant per claim 11, characterized in that ~~the~~including hoisting cables (24) of ~~the~~said land-side hoisting and lowering device (13) ~~that~~are coupled to a mobile counterweight (33) to at least partly compensate for the natural weight of ~~the~~said land-side hoisting and lowering device (13).

13. (Currently Amended) ~~Transfer~~The transfer plant per ~~one of claims 1 to~~claim 12, characterized in that ~~the~~including a loading station (15, 16) ~~that~~is arranged beneath ~~the~~said land-side hoisting and lowering device (13), said loading station having two pick-up and hand-off positions that can travel alternately underneath ~~the~~said hoisting and lowering device (13), cooperating with a horizontal conveying system (17).

14. (Currently Amended) ~~Transfer~~The transfer plant per ~~one of claims 1 to~~claim 13, characterized in that ~~the~~wherein said transfer plant (1) has a gantry type substructure (1.1), supported on said rail traversing mechanisms (1.2), ~~the~~wherein said extension arm (1.6) protrudes across ~~the~~said substructure (1.1) on the land side, and ~~the~~said vertical support (1.3) is propped up centrally on ~~the~~said substructure (1.1) at the land side.

15. (Currently Amended) ~~Method~~A method of loading and unloading of containers from container ships ~~by means of a transfer plant (1), especially according to one or more of claims 1 to 16,~~ with a vertical support (1.3) which is propped up at the land side and on which a

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horizontal extension arm (1.4, 1.5 and 1.6) is braced, ~~which~~ wherein said extension arm protrudes across the ship (3) that is to be unloaded on the sea side and along which ~~at least~~ two horizontal conveying device (9, 10) devices can travel, ~~which~~ wherein said conveying device cooperates with hoisting and lowering devices (9, 10) ~~[sic]~~ that pick up and put down the containers (18, 19, 21), said hoisting and lowering devices being arranged at the land and sea side and also on ~~the~~ said horizontal extension arm (1.4, 1.5 and 1.6), ~~with~~ wherein said at least two horizontal conveying devices (9, 10) ~~are~~ arranged on the horizontal extension arm (1.4, 1.5, 1.6), ~~which~~ and can travel independently of each other between the land-side and sea-side hoisting and lowering devices (11, 13) along the horizontal extension arm (1.4, 1.5, 1.6), and with intermediate storage devices (12, 14) arranged on the horizontal extension arm (1.4, 1.5, 1.6) in the region of at least one chosen from the land-side ~~and/or~~ and the sea-side hoisting and lowering devices (11, 13), where containers can be put down or picked up by the land-side or sea-side hoisting and lowering devices (11, 13), as well as the horizontal conveying devices (9, 10), ~~characterized by the sequence of the following work steps, the~~ method comprising:

a) for the unloading of containers from a container ship (3) tied up at the dock (2), providing a spreader and picking up a container (18, 19, 21) is picked up by a said spreader (20) of the sea-side hoisting and lowering device (11), which has been positioned on the horizontal extension arm (1.4, 1.5, and 1.6) above the container (18, 19, 21), and raised to a maximum hoisting height,

b) providing a horizontally swiveling carrying arm having a horizontally swiveling carrying frame at the intermediate storage device arranged on the sea-side hoisting and lowering device (11), with a horizontally swiveling carrying arm (12.2) and a horizontally swiveling carrying frame (12.3) arranged on it, is swiveled said carrying arm and carrying frame swiveling from its a position of rest underneath a railway (7, 8) of the two horizontal conveying devices (9, 10) into a position underneath the container (18, 19, 21),

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- c) placing the container (18, 19, 21) ~~is placed down~~ on the carrying frame (12.3) and ~~swiveled~~ swiveling the container along with ~~the said carrying frame~~ under one of the two railways (7, 8) of the horizontal conveying devices (9, 10),
- d) positioning at least one of the horizontal conveying device[s] (9, 10) ~~positioned above~~ the container (18, 19, 21) on the carrying frame (12.3) ~~receives~~ receiving the container (18, 19, 21) and ~~transports it~~ transporting the container to the end of the land-side extension arm (1.6), while the sea-side hoisting and lowering device (11) picks up a new container (18, 19, 21),
- e) handing off the container at the land-side end of the extension arm (1.6), ~~the container (18, 19, 21) is handed off to~~ a carrying frame (14.3) of a second intermediate storage device (14), having a downwardly extending support column (14.2), ~~which has been swiveled and~~ swiveling said carrying frame by a horizontal swivel arm (14.1) into the region of the railways (7, 8) of the horizontal conveying devices (9, 10) underneath the container (18, 19, 21),
- f) after detaching the container (18, 19, 21) from the horizontal conveying device (9, 10), swiveling the carrying frame (14.3) with the container (18, 19, 21) ~~is swiveled under~~ the hoisting mechanism of the hoisting and lowering device (13) hinged to the land-side extension arm (1.6), ~~where and picking up the container (18, 19, 21) is picked up by~~ a spreader (22),
- g) ~~after~~ swiveling the carrying frame (14.3) swivels back, and lowering the container (18, 19, 21) ~~is lowered by~~ the hoisting and lowering device (13) and ~~handed~~ handing off the container to a horizontal conveying system (15, 16) on the ground,
- h) ~~at the same time as the above described work steps~~ concurrently with steps a through g, picking up a second container (18, 19, 21) ~~picked up by~~ the sea-side hoisting and lowering device (11) ~~is transported and transporting the second container~~ by the second horizontal

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conveying device (9, 10) across its other railway (7, 8) to the end of the extension arm (1, 6) at the land side, where ~~the~~ the second container is handled in the same fashion, and

i) performing the above-mentioned work steps are performed a through h in reverse sequence for the loading ~~process~~ containers on a ship.

16. (Currently Amended) ~~Method~~ The method per claim 15, ~~characterized in that~~ wherein the container (18, 19, 21) ~~that is~~ is oriented transversely to the lengthwise axis of the extension arm when picked up by the first hoisting and lowering device (11) is swiveled into a predetermined position parallel to the extension arm (1, 4, 1, 5, 1, 6) by one chosen from the carrying arm (12, 2) ~~and/or~~ and the carrying frame (12, 3) swiveling through $\pm 90^\circ$.

17. (Currently Amended) ~~Method~~ The method per claim 15 ~~or 16~~, ~~characterized in that~~ wherein the container (18, 19, 21) ~~that is~~ is oriented parallel to the extension arm (1, 4, 1, 5, 1, 6) when placed on the carrying frame (14, 3) of the second land-side hoisting and lowering device (13) remains unchanged in its orientation when swiveled into the region of the hoisting and lowering device (13) ~~thanks to~~ as a result of opposite swivel movements of the carrying arm (14, 2) and carrying frame (14, 3).

18. (New) The method per claim 15, wherein the container that is oriented parallel to the extension arm when placed on the carrying frame of the second land-side hoisting and lowering device remains unchanged in its orientation when swiveled into the region of the hoisting and lowering device as a result of opposite swivel movements of the carrying arm and carrying frame.

19. (New) The transfer plant per claim 1, wherein said horizontal extension arm comprises a rigid base arm at the sea side, a swivel arm joined to it at the sea side, and a rigid extension arm protruding at the land side; said rigid sea-side base arm and said rigid land-side arm being fastened to said vertical support, wherein said rigid sea-side base arm accommodates

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said sea-side hoisting and lowering device in a position of rest of the transfer plant, in which said sea-side swivel arm is swiveled upward.

20. (New) The transfer plant per claim 1 including a railway carried by the sea-side portion of said horizontal extension arm, wherein said railway is for movement of a trolley of the sea-side hoisting and lowering device, wherein said land-side hoisting and lowering device is fastened at the land-side portion of said horizontal extension arm, said transfer plant further including other railways for the horizontal conveying devices arranged on both sides next to said railway of the sea-side hoisting and lowering device and next to the land-side hoisting and lowering device essentially along the entire horizontal extension arm.

21. (New) The transfer plant per claim 20, wherein said vertical support is fashioned in the shape of a tower, wherein said railway for the hoisting and lowering device ends in the region of said vertical support, and said other railways for said horizontal conveying devices run laterally past the vertical support.

22. (New) The transfer plant per claim 2, wherein said intermediate storage devices each comprise a downwardly extending support column and a horizontal swivel arm attached at a lower end of said support column and a carrying frame hinged at an end of said swivel arm away from said support column, wherein said carrying frame can swivel both into the region underneath said sea-side or land-side hoisting and lowering device and into the region of said two horizontal conveying devices into corresponding pick-up and hand-off positions for the picking up or handing off of a container.

23. (New) The transfer plant per claim 22, wherein said sea-side swivel arm and said sea-side carrying frame can each swivel at least $\pm 90^\circ$ about vertical axis, independently of each other.

24. (New) The transfer plant per claim 6 including a parallelogram type coupler mechanism, wherein said swivel mechanism of at least one chosen from said land-side carrying arm and

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said land-side carrying frame can be driven by said parallelogram type coupler mechanism, so that the orientation of the container remains unchanged during the swivel motion.

25. (New) The transfer plant per claim 6, wherein said carrying frame for the container can be swiveled into a central swivel position between the two pick-up and hand-off positions in the region of said railways, where the container can be connected to or detached from said sea-side or land-side hoisting and lowering device.

26. (New) The transfer plant per claim 1, wherein said horizontal conveying devices each comprise a frame with a rail traversing mechanism that can travel on said railways, a hoisting mechanism and a spreader to receive the container which has been swiveled and positioned underneath the spreader.

27. (New) The transfer plant per claim 1, wherein said land-side hoisting and lowering device is configured as a lift guided on said vertical support, wherein said lift comprises a trolley, guided on a horizontal hoisting beam, with a load suspension means for the container, wherein said hoisting beam is suspended from hoisting cables and linked by a cross rail to guide rollers that can roll against said vertical support.

28. (New) The transfer plant per claim 27 including hoisting cables of said land-side hoisting and lowering device that are coupled to a mobile counterweight to at least partly compensate for the natural weight of said land-side hoisting and lowering device.

29. (New) The transfer plant per claim 1 including a loading station that is arranged beneath said land-side hoisting and lowering device, said loading station having two pick-up and hand-off positions that can travel alternately underneath said hoisting and lowering device, cooperating with a horizontal conveying system.

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30. (New) The transfer plant per claim 1, wherein said transfer plant has a gantry type substructure, supported on said rail traversing mechanisms, wherein said extension arm protrudes across said substructure on the land side, and said vertical support is propped up centrally on said substructure at the land side.